**Claims**

I claim:

1. A single piece container of a non-reactive material for high temperature preparation of materials for testing in the presence of an electrolyte.

2. The container according to claim 1, wherein the electrolyte is an acid.

3. The container according to claim 2, wherein the acid is sulfuric acid.

4. The container according to claim 2, wherein the acid is hydrofluoric acid.

5. The container according to claim 2, wherein the acid is perchloric acid.

6. The container according to claim 1, wherein the non-reactive material is a graphite or graphite composite.

7. The container according to claim 6, wherein the container is at least partially covered with a non-reactive coating.

8. The container according to claim 7, wherein the non-reactive coating is Teflon.

9. The container according to claim 6, having a bottom and sides wherein the transition between the bottom and sides is arcuate.

10. A single piece container for holding materials in the presence of acid comprising a base connected to sides of the container forming an internal cavity that contains the materials and acid.

11. The container according to claim 10, wherein the container has a cover.

12. The container according to claim 11, wherein the container has a cover that matingly engages the container with at least one flange and c-channel.

13. The container according to claim 10, wherein the container has a pouring spout.

14. The container according to claim 10, wherein the container has a handle

15. The container according to claim 14, wherein the container has a pouring spout.

16. A single piece container for preparing or testing materials that is resistant to acids and temperature of at least 400 degrees Celsius made of a graphite or graphite composite material having a thermal conductivity of 40 to 120 W/(m*K).

17. The container according to claim 16, wherein the graphite or graphite composite material has a compressive strength in the range of 80 to 150 $N/mm^2$.

18. The container according to claim 17, wherein the graphite or graphite composite has a Young's Modulus in the range of 10 to $13*10^3$ $N/mm^2$.

19. The container according to claim 16, wherein the graphite or graphite composite has a bulk density of about 1.7 to 1.9 $g/cm^3$.

20. The container according to claim 16, wherein the graphite or graphite composite is R7510.